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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,286	01/27/2004	Steven M. Malachowski	D/A1721D	9173

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EXAMINER	
RAGONESE, ANDREA M	

ART UNIT	PAPER NUMBER
3743	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/765,286	MALACHOWSKI ET AL.	
	Examiner	Art Unit	
	Andrea M. Ragonese	3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3 and 6-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3 and 6-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3 January 2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on January 3, 2005 has been entered. Examiner acknowledges that **claims 1** and **3** have been amended, **claims 2, 4** and **5** have been canceled, and **claims 15-17** have been added. Subsequently, **claims 1, 3** and **6-17** are under consideration.

Response to Arguments

2. Applicant's arguments with respect to **claims 1-14** have been considered but are moot in view of the new ground(s) of rejection.

Drawings

3. The drawings were received on January 3, 2005. These drawings are accepted.

Claim Rejections - 35 USC § 102 and 35 USC § 103

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. **Claims 1, 3, 6-10** and **16-17** are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Browne et al. (US 4,489,503).

Regarding **claims 1, 3, 6** and **16-17**, Browne et al. discloses a dryer **10** fully capable of drying toner particles having a predetermined glass transition point (T_g) to create dry free-flowing toner, as shown in Figure 1, comprising:

a toroidal drying chamber **11** having a curved inner radius portion;

at least one drying gas inlet **30** extending into the drying chamber **11** for introducing heated drying gas into the drying chamber **11** to produce a circulating flow of drying gas having a curved portion;

a feed inlet **22** for introducing wet toner particles into the circulating flow of drying gas and inherently exerting centrifugal forces F_C on the particles in the curved portion; and

an exit path **32** communicating with the drying chamber **11** curved inner radius portion directing an exiting stream of the drying gas out of the drying chamber **11** fully capable of creating exiting forces (F_E) on the particles in the circulation flow for moving dry particles from the drying chamber **11** when $F_C < F_E$.

Although Browne et al. does not explicitly recite exerting centrifugal forces F_C on the particles in the curved portion, based on the prior art drawings and the written description, the motion of the particles make it obvious, if not inherent, given the structure shown in Figure 1, that centrifugal forces are being exerted on the particles as they move through the drying chamber **11**.

In addition, Brown et al. discloses an apparatus in which the claimed functional limitations can inherently be performed since the apparatus of Brown et al. utilizes a drying chamber **11** that is fully capable of producing centrifugal forces on the particulate material in order to move the particulate material in a circulating flow of gas. These recitations are statements of intended use utilizing functional language, which may not be given patentable weight in apparatus claims. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function alone. See MPEP § 2114. See In re Swinehart, 169 USPQ 226 (CCPA 1971); In re Schreiber, 44 USPQ2d 1429 (Fed. Cir. 1997).

Regarding **claims 7-8**, wherein the heating drying gas is introduced into the drying chamber **11** at pressure of about 1.0 psi (0.070 kgf/cm^2) to about 5.0 psi (0.35 kgf/cm^2), or more specifically, of about 1.0 psi (0.070 kgf/cm^2) to about 1.5 psi (0.11

kgf/cm^2). Browne et al. states, "The pressure of the heated gas generally ranges from about 0.02 to about 0.2 and preferably from about 0.05 to about 0.15 kilograms per square centimeter" (column 6, line 64 through column 7, line 8). Therefore, the claimed ranges fall within the ranges of the prior art.

Regarding **claims 9-10**, wherein the heated drying gas is introduced into the drying chamber **11** at a velocity of about 3,000 feet per minute (15.2 m/s) to about 5,000 feet per minute (25.4 m/s), or more specifically, of about 3,800 feet per minute (19.3 m/s) to about 4,200 feet per minute (21.3 m/s). Browne et al. is fully capable of introducing the gas at a velocity of up to 122 meters per second, and therefore, would be fully capable of introducing it at a lower velocity. More specifically, Brown et al. states, " The inlets are equipped with nozzles to spray the heated gas at a velocity high enough to impart sufficient energy to the circulating dry particles and the wet particles feed to cause circulation of the particles in a circular annular zone, while breaking up the agglomerates of wet particles into dry crystals" (column 7, lines 2-8).

Claim Rejections - 35 USC § 103

8. **Claims 11-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Browne et al. (US 4,489,503), as applied to **claim 1** above, in view of Lee et al. (US 5,350,659). Browne et al. discloses dryer **10** comprising all the limitations recited in **claims 11-14**, with the exception of the specific temperature at which the heated drying gas is introduced and the temperature at which the dry particles exit. However, the use of these temperatures, in relationship to the glass transition point (T_g), for drying toner particles, was known at the time the invention was made.

Regarding **claims 11-12**, Lee et al. teaches a method of heat treatment of toner particles, "wherein said heat treatment is carried out at a temperature at or above the glass transition temperature of the resin...and then (B) cooling the heated toner particles to a temperature below the glass transition temperature of the resin" (column 2, lines 27-40). Subsequently, the prior art of record meets the claim limitations of **claims 11-12** since the exiting stream of toner particles would be cooled before exiting a heat treatment chamber, the temperature being below glass transition temperature, which meets the limitations "of about 12°C below T_g..." and "of about 8°C below T_g...", respectively. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus, and method inherent in the use of the apparatus, of Browne et al. by cooling the toner particles to a temperature below glass transition temperature because it is known in the art, as taught by Lee et al., to produce toner particles with "lower energy costs and improved process control and [allowance of] process variations needed for adjusting toner properties...[as well as] use of smaller particles and nonuse of solvent" (column 2, lines 54-60).

Regarding **claims 13-14**, Lee et al. teaches a method of heat treatment of toner particles wherein, "the specific temperature of the heat treatment will depend on the specific resin used in the toner, typically a temperature in the range of 80°C. to 150°C. will be sufficient" (column 5, lines 50-63). Lee at al. also states that the glass transition temperature is in the range of 50°C to 70°C (column 4, lines 25-33). Then, for example, if T_g = 70°C and the exiting stream temperature is below that (T_E=69°C), then the range as claimed in **claims 13-14** of "15°C above...to 40° above" and "20°C above...to 35°

above," respectively, would yield prior art ranges of the heated gas being introduced in the range from 84°C (69°C + 15°C) to 109°C (69°C + 40°C) and from 89°C (69°C + 20°C) to 104°C (69°C + 35°C), respectively. These values clearly fall well within the range of 80°C to 150°C, as taught by Lee et al. Subsequently, the prior art of record meets the claim limitations of **claims 13-14** since the heated drying gas would be introduced into the drying chamber at a range of temperatures above the temperature range of the exiting stream of toner particles. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus, and method inherent in the use of the apparatus, of Browne et al. by introducing the drying gas at a temperature above the exiting stream of particles because it is known in the art, as taught by Lee et al., to produce toner particles which are prevented "from adhering to each other even if their surfaces are softened...[and after] a sufficient time, ...the conductive particles embed themselves in the surface of the resinous particles and become bonded into the resinous particles" (column 5, lines 60-67).

9. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Browne et al. (US 4,489,503), as applied to **claim 1** above, in view of Callegari, Sr. et al. (US 4,753,633). Browne et al. discloses dryer **10** comprising all the limitations recited in **claim 15**, with the exception of the centripetal forces acting on the particles as they exit from the drying chamber. However, the use of centripetal forces on a fluid stream exiting from a toroidal chamber was known at the time the invention was made. Callegari, Sr. et al. teaches that subjecting a fluid stream to centripetal forces as it exits

a toroidal chamber is well known when the fluid is being drawn out of a chamber (column 2, line 63 through column 3, lines 5 and column 4, lines 43-46). Therefore, it would have been obvious, if not inherent, to subject the exiting particle stream from the drying chamber of Browne et al. with centripetal forces, as taught by Callegari, Sr. et al., since that is a well-known method of drying fluid out of a chamber.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Andrea M. Ragonese whose telephone number is 571-272-4804**. The examiner can normally be reached on Monday through Friday from 9:00 am until 5:00 pm.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry A. Bennett can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AMR
March 21, 2005

Henry Bennett
Supervisory Patent Examiner
Group 3700